



Introducing Automation for Cisco Solutions (CSAU)

COURSE OVERVIEW

The Introducing Automation for Cisco Solutions (CSAU) v1.0 course gives you a broad overview of network automation skills. Through a combination of lecture and hands-on labs, you will learn the fundamentals of automation such as working on model-driven programmability solutions with Representational State Transfer Configuration Protocol (RESTCONF) and Network Configuration Protocol (NETCONF) protocols. The course also covers data formats and types, including Extensible Markup Language (XML), JavaScript Object Notation (JSON), Yaml Ain't Markup Language (YAML), and Yet Another Next Generation (YANG), and their value in network automation, along with DevOps tools such as Ansible and Git.

This course does not lead directly to a certification exam, but it does cover foundational knowledge that can help you prepare for several professional-level automation courses and exams:

- Implementing Automation for Cisco Enterprise Solutions (ENAUTO)
- Implementing Automation for Cisco Data Center Solutions (DCAUTO)
- Implementing Automation for Cisco Security Solutions (SAUTO)
- Implementing Automation for Cisco Service Provider Solutions (SPAUTO)
- Implementing Automation for Cisco Collaboration Solutions (CLAUTO)

This course will help you:

- Gain an overview of the skills you need to become a next-generation engineer
- Prepare to accelerate network automation in your organization
- Increase collaboration across internal and external teams using version control systems

WHO WILL BENEFIT FROM THIS COURSE?

This course is designed primarily for customer engineers and systems engineers in the following job roles:

- Automation architect
- Automation engineer
- Consulting systems engineer
- DevOps engineer
- Network administrator
- Network architect
- Network consulting engineer
- Network design engineer
- Network engineer
- Network operator
- Network reliability engineer
- Sales engineer
- Site reliability engineer
- Systems engineer
- Technical solutions architect



This course would also be useful for network manager job roles such as:

- Application developer
- Collaboration developer
- Collaboration solutions architect
- IT director
- Mobile developer
- Network Operations Center (NOC) manager
- Software architect
- Web developer

PREREQUISITES

Before taking this course, you should have the following knowledge and skills:

- Routing and switching including Open Shortest Path First (OSPF), Border Gateway Protocol (BGP), and basic configuration features such as interfaces, Simple Network Management Protocol (SNMP), and static routes
- Fundamentals of Python data structures and programming constructs such as loops, conditionals, and classes, or the equivalent of 3–6 months of experience writing Python scripts
- Basic Linux commands for navigating the file system and executing scripts
- Knowledge of working with text editors

COURSE OBJECTIVES

After taking this course, you should be able to:

- Articulate the role network automation and programmability play in the context of end-to-end network management and operations
- Interpret and troubleshoot Python scripts with fundamental programming constructs built for network automation use cases
- Describe how DevOps principles, tools, and pipelines can be applied to network operations
- Understand the role of network automation development environments and associated technologies such as Python virtual environments, Vagrant, and Docker
- Understand and construct HTTP-based API calls to network devices
- Articulate the differences among and common use cases for XML, JSON, YAML, and protobuf
- Construct and interpret Python scripts using the Python requests module to automate devices that have HTTP-based APIs
- Understand the role YANG plays in network automation
- Understand that a number of tools exist to simplify working with YANG models
- Describe the functionality of RESTCONF and NETCONF and the differences between them
- Construct Ansible playbooks to configure network devices and retrieve operational state data from them
- Build Jinja2 templates and YAML data structures to generate desired state configurations

COURSE OUTLINE

- Examining Network Management and Operations
- Exploring Software Development Methodologies
- Using Python for Network Automation
- Describing NetDevOps: DevOps for Networking
- Managing Automation Development Environments
- Introducing HTTP Network APIs
- Reviewing Data Formats and Data Encoding
- Using Python Requests to Automate HTTP-Based APIs
- Exploring YANG
- Using YANG Tools
- Automating Model-Driven APIs with Python
- Introducing Ansible for Network Automation
- Templating Configurations with Jinja2
- Exploring Cisco Ansible Integrations
- Introducing Multidomain Network Automation

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Sunset Learning Institute (SLI) has been an innovative leader in developing and delivering authorized technical training since 1996. Our goal is to help our customers optimize their technology Investments by providing convenient, high quality technical training that our customers can rely on. We empower students to master their desired technologies for their unique environments.

What sets SLI apart is not only our immense selection of trainings options, but our convenient and consistent delivery system. No matter how complex your environment is or where you are located, SLI is sure to have a training solution that you can count on!

Premiere World Class Instruction Team

- All SLI instructors have a four-year technical degree, instructor level certifications and field consulting work experience
- Sunset Learning has won numerous Instructor Excellence and Instructor Quality Distinction awards since 2012

Enhanced Learning Experience

- The goal of our instructors during class is ensure students understand the material, guide them through our labs and encourage questions and interactive discussions.



Convenient and Reliable Training Experience

- You have the option to attend classes live with the instructor, at any of our established training facilities, or from the convenience of your home or office
- All Sunset Learning Institute classes are guaranteed to run – you can count on us to deliver the training you need when you need it!

Outstanding Customer Service

- You will work with a dedicated account manager to suggest the optimal learning path for you and/or your team
- An enthusiastic student services team is available to answer any questions and ensure a quality training experience

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